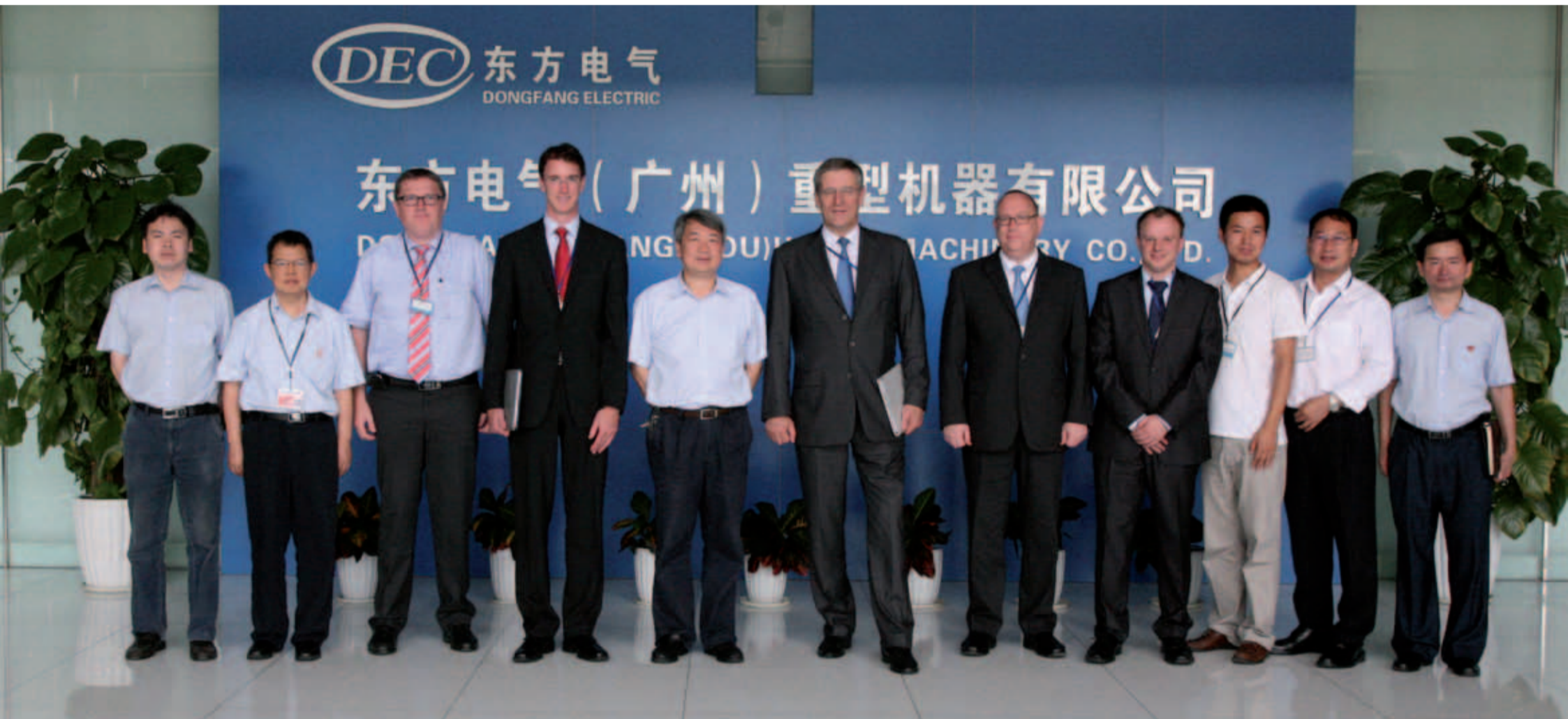


Trademark: technical excellence



The representatives of Dongfang Electric and WaldrichSiegen at the Design Review Meeting of the large gantry milling machine in China

In 1840, the foundation stone of the parliament building Palace of Westminster was laid in London. Samuel F. B. Morse received the patent for his telegraph and Heinrich Adolf Waldrich founded the company WaldrichSiegen. Today, 172 years later, the Palace of Westminster is London's most famous landmark. We owe today's electronic communication to Morse's telegraph and the former local pump producer WaldrichSiegen became the leading manufacturer of heavy grinding, turning, milling and texturing machine tools worldwide. 1840 was a year that shaped world history.

WaldrichSiegen looks back on a long and successful history.

Today the company can be best described with the word "modern". Modern design programmes and assembly methods induce constant optimizations and further developments – WaldrichSiegen is oriented towards the challenges of the present and future. The exceptional performance of the WaldrichSiegen machine tools confirms these principles using innovative ideas.

The ProfiMill 8500/120-G milling machine utilizing a gantry design is a perfect example. WaldrichSiegen sold the machine to Dongfang Heavy Machinery, a subsidiary of Dongfang Electric DEC, in spring. 135 kW performance of the main spindle allowing an available torque of 10,000 Nm

are unique characteristics for a machine on the market having 8,500 mm width between columns.

A quarter of a year after signing the contract, the contracted Design Review Meeting took place in Guangzhou, China. WaldrichSiegen was represented by President Dietmar Weiß, Dr. Stephan Witt, head of mechanical construction, Ralf Tschersche, the responsible design engineer, Hubert Schuhen, Senior Sales Manager and Stefan Elze, Head of the WaldrichSiegen Beijing Representative Office. By using modern 3D construction and FE analyses software, WaldrichSiegen managed to complete the design of the milling machine

after only three months. Some issues concerning the design of the machine foundation, the electrical equipment and the CNC control had not been specified previously and were successfully clarified at the meeting.

The climate in Guangzhou is shaped by very high humidity and temperatures over 40° C. Thus, WaldrichSiegen paid specific attention to the electrical equipment. The high quality of the electrical components guarantees the machine's reliable use in these difficult climatic conditions.

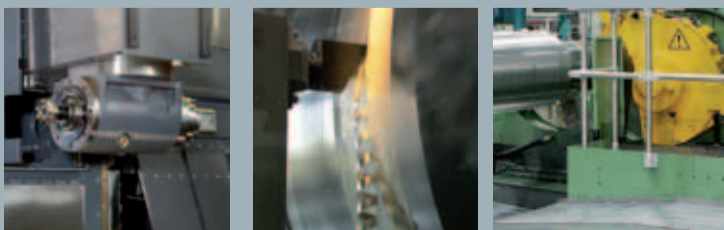
Overall, the customer Dongfang was very satisfied with the design of the ProfiMill. After implementing the requested changes, the

design can be completed and the production of the machine started. As early as late summer 2013, the machine will be delivered to Dongfang.

Only by modularising the single machine components, perfectly planning the production sequence and using their great experience in the implementation of demanding projects, WaldrichSiegen can produce the machine in this short time frame.

Maximum performance resulting from the will to innovate – with the gantry type machine, WaldrichSiegen again proves to be the technology leader in the field of heavy machine tools.

Dietmar Weiß



- Mill pinion gear box – produced with highest precision
- Flexible support in greatest trouble
- Commissioning at Mitsubishi Power Systems Americas

- On-site world-wide: service in Korean
- State-of-the-art after 25 years of use
- Quality in every single detail
- In the focus of politics and economy

Mill pinion gear box – produced with highest precision

“Talent wins games, but teamwork and intelligence wins championships”, said Michael Jordan, the greatest basketball star of all times. What he meant is this: While the talent of a single player can be decisive to win a game, you will only achieve long-term success when you combine the strengths of the individuals.

This is not only true in sports but also in economy. It can be substantiated when taking a look at our HerkulesGroup and the two companies RSGetriebe and UnionChemnitz which recently joined the group. By exploiting the synergies, the group of companies lays the foundation for long-term success from which our customers will benefit.

Since spring 2012, the gear box manufacturer RSGetriebe, formerly known as RS Antriebstechnik, is part of the group of companies. Previously, the company was closely connected with WaldrichSiegen and Herkules as the supplier of high quality drives. Now, the great know-how of the gear box experts is used for a further development within the group: new milling heads for UnionChemnitz machines. WaldrichSiegen takes on designing the milling heads because we have been constructing milling heads in-house for many years. RSGetriebe currently produces the prototype of the milling head aggregates. The first aggregates have over 50 % better performance compared with the previous heads bought.

The design know-how of WaldrichSiegen, the great experience of RSGetriebe – these examples perfectly illustrate the advantages that close cooperation of the group members has for our customers.

The shared use of a service and sales network by WaldrichSiegen and UnionChemnitz is another example for excellently used synergies: UnionChemnitz gains an access to new markets and industries they did not have before. On the other hand, WaldrichSiegen offers their traditional customers a broader product portfolio from one source.

By elaborately using know-how and resources, the companies in the HerkulesGroup manage to defend and expand their top position in the league of heavy machine tools year after year.

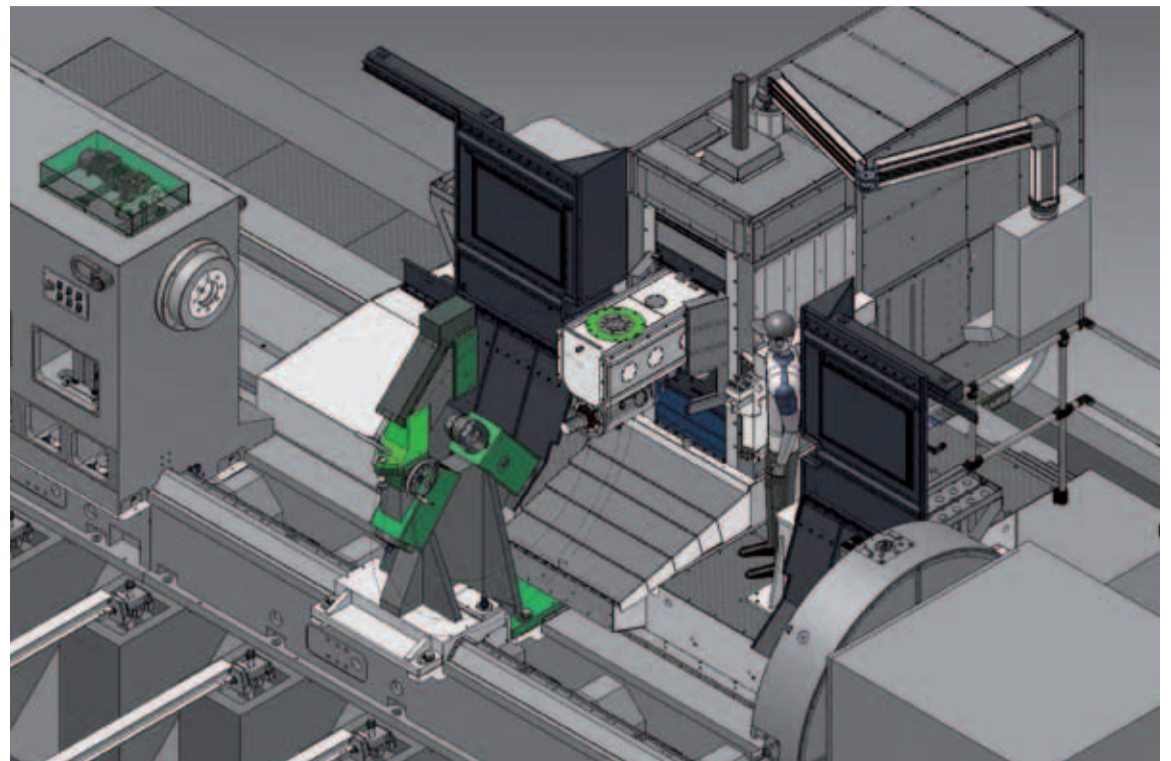
For many centuries, mill pinion gear boxes or their underlying system respectively have been used in the most progressive contemporary technologies – even today. As early as in the times of early industrialization their forerunners, cog wheels, gear wheels with comb-like wooden cogs, drove flour mills. Later, this technology was adopted in hydro-powered rolling mills: the gear tooth profiles were produced by casting and manually adjusting them.

This manufacturing method no longer complies with modern demands concerning reproducibility and accuracy. Today, mill pinion drives transmit performances of over 10,000 kW. High performances like that require high quality materials and precise production.

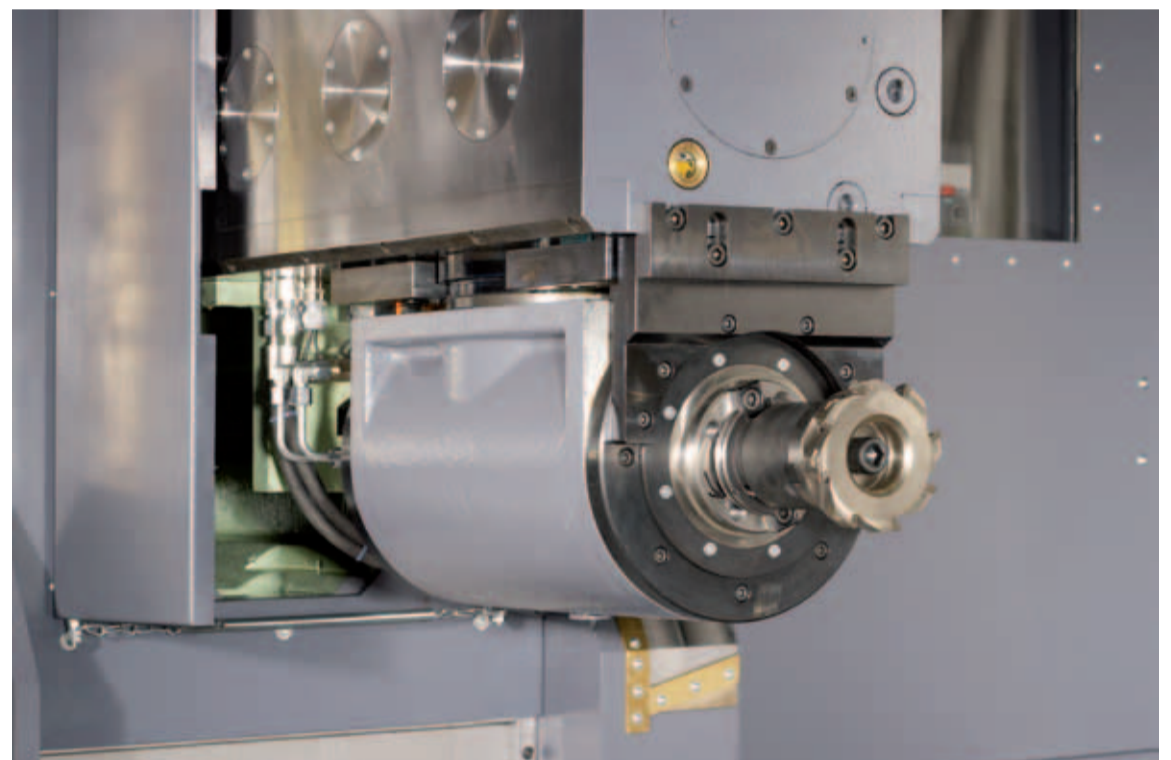
NKMZ, a Ukrainian manufacturer of roll stands, produces mill pinion gear boxes. When the company invested in a new machine tool for machining their gear boxes, they trusted in the renowned WaldrichSiegen competence. With their great expertise, WaldrichSiegen individually designs the machines to meet the demands of the end user.

Machining heavy work pieces with high accuracies and meeting tooth qualities with the help of integrated measuring equipment – NKMZ placed high demands on the ProfiTurn millturning machine. Thus, the WaldrichSiegen engineers designed the ProfiTurn according to these specifications. This included the time calculation for a defined shaft, the design of the tool package and the quality assurance provided by measuring probes, hardware and software.

After the commissioning, NKMZ will machine work pieces up to 8,000 mm in length and weighing 100 t with the ProfiTurn. The



Millturning with one machine and one set-up: The ProfiTurn for NKMZ...



...with a milling aggregate that is a fully functioning CNC axis

integrated milling head aggregate can be swivelled +/- 95 degrees. It is traversable by 260 mm in the Y direction. Adapted perfectly to the machining of mill pinion gear boxes and other tasks, the Y axis is an exceptional NC axis that

sets new standards. Moreover, a measuring device will be integrated to measure parameters including the tooth thickness. WaldrichSiegen will develop a screen input for all relevant data and other parameters. The opera-

tor can export this data for future reference. With the ProfiTurn, NKMZ will reliably and productively machine mill pinion gear boxes meeting all parameters.

Hans-Joachim Seidel

Flexible support in greatest trouble

Dresser-Rand is among the largest suppliers of rotating equipment solutions to the worldwide oil, gas, petrochemical and process industries. Their heritage allows the delivery of custom-engineered steam turbines for electric and mechanical drives. Dresser-Rand has one of the most comprehensive steam turbine selections in the industry. When a major flood rushed through the Dresser-Rand Wellsville, NY facility in May of

2011, nearly all of the 375 machines and machining operations were affected, necessitating the launch of an exhaustive effort to clean-up, rebuild and regain manufacturing operations.

One of the largest milling machines at the Dresser-Rand Wellsville facility was determined to have a faulty power supply that was beyond repair and no longer available. Thus, Dresser-Rand had this large machine

being non-productive for many months, requiring the largest and most complex parts to be sent off site to be machined. Herkules USA and WaldrichSiegen were sensitive to the customer's position when they received the order to repair the damaged machine and to supply new components. Herkules USA was able to reroute a control bought for one of its own machine rebuilds and support this customer's efforts to put the machine back into operation within the shortest possible

time frame. Herkules USA replaced motors, drives and the feedback package on this legacy machine. Combined with the new CNC control they brought the machine current with today's technology and enhance future machining capabilities by utilizing advanced control features and AC digital drives. Thus, Herkules USA and WaldrichSiegen assure continued machine performance and reliability in future years.

Steve Birchall

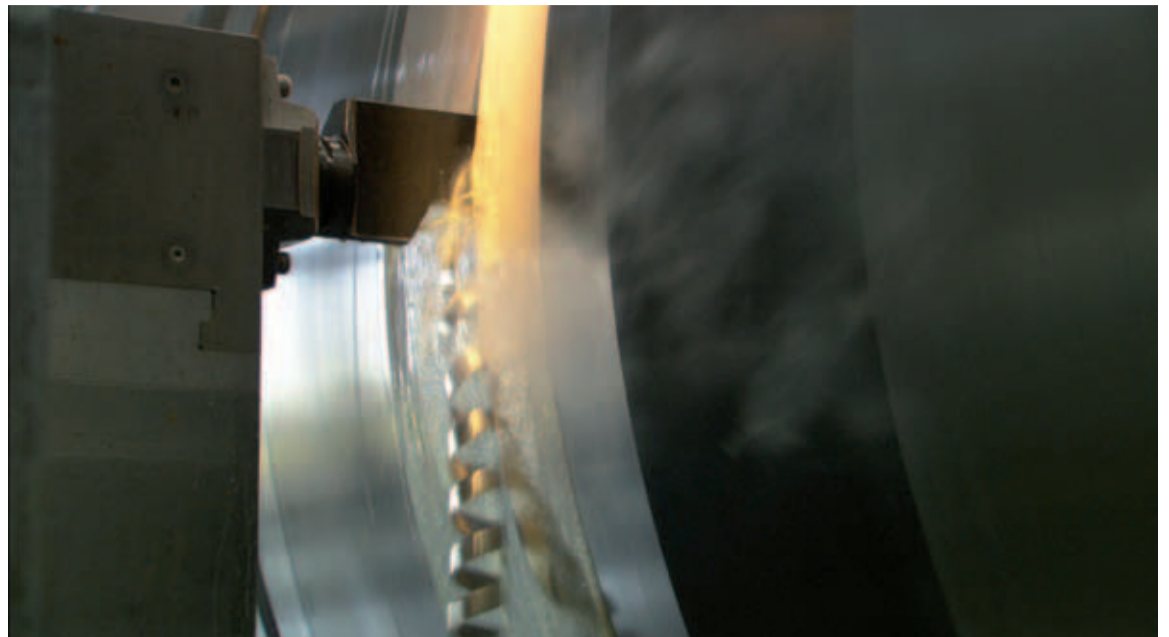
Commissioning at Mitsubishi Power Systems Americas

In line with Mitsubishi Heavy Industries' (MHI) long-term strategy, the Japanese company is globalizing its manufacturing and service facilities. Part of this strategy is the additional expansion of a new green field production site for its subsidiary Mitsubishi Power Systems Americas, Inc. (MPSA) in Pooler, GA, USA. The project comprises of the fabrication of combustor components, gas and steam turbine rotors and the assembly of gas turbines. After groundbreaking in September 2009, new manufacturing and office buildings were aggressively erected at breathtaking speed. This permitted the aggressive installation and operation of initially purchased machines.

In 2010 MPSA placed orders for two horizontal lathes (of different sizes) with WaldrichSiegen. They are intended to machine new gas

and steam turbine rotors as well as repair and overhaul rotors within the company's service business. Just one year later MPSA purchased another lathe from WaldrichSiegen, nearly identical to the smaller machine previously ordered.

In parallel with ramping up the production of combustor components, the lathes were manufactured and installed. In June 2012, the first of three lathes successfully passed acceptance. It is now in production at MPSA for the machining of smaller turbine rotors. The second machine is now also commissioned and allows MPSA to machine rotors with a significantly larger diameter. The third machine is going to follow in a couple of months. The three machines play an important role in the manufacture and servicing of rotors from the wide array of parts within the Mitsubishi Power Systems product line. The decision to place the



Lathes of the ProfiTurn series – precise and productive machining of work pieces

orders with one single supplier provides significant benefits to MPSA in terms of a target oriented project management. Additional advantages are evident in regards

to training of operators and maintenance staff, exchanging NC programs, servicing of the machines and spare parts management. Both parties also benefit from Waldrich-

Siegen's close long term business relationship with the parent company MHI in Japan.

Henning Wixmertzen

On-site worldwide: service in Korean

WaldrichSiegen is known for its excellent service. This service also includes proximity to the customer. On the one hand this promotes better understanding of the customers' requirements by working closely with them, on the other hand aids in the extended geographical presence in the form of a global sales and service network.

WaldrichSiegen has offices in all

parts of the world and thus offers its customers valuable advantages like corresponding in the local language and rapid support should service be required. In short: a direct contact person in the immediate vicinity who offers quick response and assistance with all inquiries.

Korea is one of the most important markets for WaldrichSiegen. In 2011, the WaldrichSiegen

Representative Office Korea (WRK) was opened in Ulsan. Providing exceptional services for customers including Hyundai Heavy Industries, POSCO, Doosan Heavy Industries, Hyundai Hysco and Dongbu Steel are the goals manager Mun Sig Jang and his team strive for every day. His 25 years of experience confirms that Mun Sig Jang is a competent partner to answer every question.

Based on his former occupation as a WaldrichSiegen engineer, he has a great technical know-how and is familiar with each detail of the WaldrichSiegen milling, turning, grinding and texturing machines.

WRK looks back on a successful first year: Hyundai Hysco ordered four roll grinders, POSCO five roll grinders and an EDT machine. Aside from selling

new machines, the modernization of legacy machines is an important market. Many customers plan to modernize their machines to keep up with technology. With WaldrichSiegen, they will find an experienced partner who turns their aging machines into state-of-the-art machinery.

Christina Debus

State-of-the-art after 25 years of use

In 1987, WaldrichSiegen delivered six roll grinders to Baosteel for the hot rolling

mill No 1 in China. The machines reliably provided precise and reproducible grinding

results for many years. When it became increasingly difficult to obtain spare parts, Baosteel

opted for the modernization of four universal roll grinders by WaldrichSiegen back in 2002 and 2003. Now, after successfully running 25 years in the roll shop, the two remaining universal grinders are also to be modernized. Again, WaldrichSiegen was commissioned with the revamp.

The successful revamp of the machines ten years ago was the decisive factor to opt for WaldrichSiegen again. It is a perfect example illustrating the great WaldrichSiegen expertise in this field. Other advantages are the two sister companies German Machine International Trading and Jiaxing GMT German Machine Tools in China. They allow WaldrichSiegen to guarantee

short processing times and fast responses to spare part inquiries due to their geographic proximity.

During the upcoming modernization of the two universal grinders, the mechanical components will be completely overhauled. The exchange of the CNC control and cabinet are also included in the order. Additionally, a new CP gauge arm will be installed to complete the automatic measurement of the different rolls. After these enhancements, the machine tools will comply with current technological developments and meet the latest requirements on precision, quality and efficiency.

Dirk Schmidt



High precision grinding results, high productivity, reliable operations: the machine after its modernization

Quality in every single detail



Technical discussions in a stylish ambience – WaldrichSiegen and UnionChemnitz at the AMB in Stuttgart

It was to be expected but it still came as a surprise. Once an engineering fair only known in southern Germany,

the AMB in Stuttgart is now one of the most important regional trade fairs in Germany. 90.000 visitors in

2012 speak for themselves. Ideal transport connections, clearly structured exhibition halls and an excellent organ-

isation enticed both exhibitors and industry professionals to visit.

Joachim Müller, head of sales at UnionChemnitz, reports: „The large number of exhibitors and visitors confirms the national and international importance of the AMB“.

WaldrichSiegen also exhibited at the AMB. Clear lines, high-quality materials and planning down to the last detail – the joint booth with UnionChemnitz did not only reflect the corporate identity of both companies but also that of the entire Herkules-Group. The passion for technology conveyed by the booth was clearly demonstrated to the customers. The trade fair team including the presidents Christoph Thoma, Dietmar Weiß and Michael Bergmann highlighted the advantages of the WaldrichSiegen and UnionChemnitz machines

for the end user. “We received numerous inquiries regarding the combination of lathes and boring machines. That confirms the strategic expansion of products by taking over UnionChemnitz”, says Harald Kohlsdorf, experienced sales engineer at WaldrichSiegen: “The travelling column mill MILLFORCE 1 equipped with new exchangeable aggregates, was an additional attraction for the visitors at our booth”.

Andreas Bongardt from WaldrichSiegen summarizes: „We had many talks with business partners and were able to make many new contacts“. At the moment, Harald Kohlsdorf and his colleague Timo Hees are on their way to the customers in response and to answer all inquiries.

Marita Thoma

In the focus of politics and economy

In spring 2012, Dr. Hermann Otto Solms, Vice President of the German Bundestag, visited WaldrichSiegen accepting the invitation of “Die Familienunternehmer ASU”, an association of family-owned companies. Accompanied by the presidents Christoph Thoma and Dietmar Weiß, he and 30 representatives of family-owned businesses in North-Rhine Westphalia viewed the shop floor of the machine tool manufacturer.

They witnessed the assembly of a ProfiMill milling machine for Shanghai Machine Tools, a Profi-Tex texturing machine for Indian Steel as well as a grinder for the Turkish customer ASA Aluminium.

Afterwards Dr. Hermann Otto Solms, Christoph Thoma and Dietmar Weiß debated on the

competitiveness of the German machine industry in the light of rising secondary labour costs and the tax framework for medium-sized companies in Germany and Europe. Although Germany has the best training system for young talents and thus supply the best skilled workers worldwide, there are disadvantages in the global competition.

Finally, Dr. Solms pointed out that family-owned enterprises like WaldrichSiegen were “the backbone of the economy”, because they plan using a long-term perspective and concentrate on their strengths.

Many employees of the Herkules-Group took part in the discussion.



LTR: Christoph Thoma, Ralf Göbel (Die Familienunternehmer), Dr. Hermann Otto Solms, Dr. Stephan Witt, head of construction, and guests

Jubilees at WaldrichSiegen

On April 1, 2012, two WaldrichSiegen employees celebrated their 50th company anniversary: Herbert-Johann Spring (control) and Waldemar Wroben (electrical installation) have been working with full effort at their company for five decades. Reiner Schäfer (deburring) and Karl-Hermann Jung (inspection) have been working at WaldrichSiegen for 40 years. 16 employees celebrate their 25th company anniversary in 2012.

The management wishes to thank them for their long exemplary commitment.

Siegerländer company run

8,500 runners – more than ever before – participated in the “Siegerländer AOK Firmenlauf” a company run for the employees of every company in Siegen and its surroundings. Among them were 37 employees of the HerkulesGroup.

In front of thousands of enthusiastic spectators, the WaldrichSiegen team did not achieve any top places in the individual rankings but a convincing and consistent team performance.



A strong team – the HerkulesGroup runners

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